

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Santarsiero, et al.

Serial No.: Not Yet Assigned

Filed: Herewith

For: METHOD FOR SCREENING  
MICROCRYSTALLIZATIONS FOR  
CRYSTAL FORMATION

Group No.: Not Yet Assigned

Examiner: Not Yet Assigned

Commissioner for Patents  
Washington, D.C. 20231

**PRELIMINARY AMENDMENT**

Assistant Commissioner of Patents and Trademarks  
P.O. Box 2327  
Arlington, VA 22202

Sir:

Prior to an examination on the merits of the above-identified application please amend the application as follows:

**In the Specification:**

Please replace the paragraph on page 1, beginning at line 11, with the following rewritten paragraph:

This application is a continuation of U.S. Application No. 09/851,397, filed May 7, 2001, which is a continuation-in-part of U.S. Application No. 09/336,134, filed June 18, 1999, all of which are incorporated herein by reference in their entirety.

**In the Claims:**

Please cancel claims 1-56.

Please add the following new claims 57-69.

57. An apparatus for forming submicroliter drops in an array microcrystallization to determine suitable crystallization conditions for a molecule, the apparatus comprising:  
a platform on which a multiwell plate is positionable;  
a mother liquor drop station capable of removing mother liquor from a plurality of wells of the multiwell plate and delivering submicroliter volumes of mother liquor to drop regions on the multiwell plate within a volume range of less than about 25 nL; and  
a molecule drop station capable of delivering submicroliter volumes of a solution containing a molecule to be crystallized to the drop regions within a volume range of less than about 25 nL.

58. The apparatus according to claim 29 wherein the mother liquor drop station and the molecule drop station are each capable of delivering submicroliter volumes within a volume range of less than about 20 nL.

59. The apparatus according to claim 29 wherein the mother liquor drop station and the molecule drop station are each capable of delivering submicroliter volumes within a volume range of less than about 15 nL.

60. The apparatus according to claim 29 wherein the mother liquor drop station and the molecule drop station each include a piezoelectric valve or a solenoid valve.

61. An apparatus for forming submicroliter hanging drops on cover slips used in an array microcrystallization to determine suitable crystallization conditions for a molecule, the apparatus comprising:  
a platform on which a multiwell plate is positionable;  
a cover slip station on which a plurality of coverslips are positionable;

6 a mother liquor drop station capable of removing mother liquor from a plurality of  
7 wells of the multiwell plate and delivering submicroliter volumes of mother liquor to the  
8 plurality of coverslips within a volume range of less than about 25 nL; and  
9 a molecule drop station capable of delivering submicroliter volumes of a solution  
10 containing a molecule to be crystallized to the plurality of coverslips within a volume range  
11 of less than about 25 nL.

1 62. The apparatus according to claim 33 wherein the mother liquor drop station and the  
2 molecule drop station are each capable of delivering submicroliter volumes within a volume  
3 range of less than about 20 nL.

1 63. The apparatus according to claim 33 wherein the mother liquor drop station and the  
2 molecule drop station are each capable of delivering submicroliter volumes within a volume  
3 range of less than about 15 nL.

1 64. The apparatus according to claim 33 wherein the mother liquor drop station and the  
2 molecule drop station are each capable of delivering submicroliter volumes to at least four  
3 coverslips at a time.

1 65. The apparatus according to claim 33 wherein the mother liquor drop station and the  
2 molecule drop station are each capable of delivering submicroliter volumes to at least eight  
3 coverslips at a time.

1 66. An apparatus for forming submicroliter drops in an array microcrystallization to  
2 determine suitable crystallization conditions for a molecule, the apparatus comprising:  
3 a platform on which a multiwell plate is positionable;  
4 a mother liquor drop station capable of removing mother liquor from a plurality of  
5 wells of the multiwell plate and delivering submicroliter volumes of mother liquor to sitting  
6 drop regions on the multiwell plate within a volume range of less than about 25 nL; and  
7 a molecule drop station capable of delivering submicroliter volumes of a solution  
8 containing a molecule to be crystallized to the sitting drop regions within a volume range of  
9 less than about 25 nL.

1 67. The apparatus according to claim 38 wherein the mother liquor drop station and the  
2 molecule drop station are each capable of delivering submicroliter volumes within a volume  
3 range of less than about 20 nL.

1 68. The apparatus according to claim 38 wherein the mother liquor drop station and the  
2 molecule drop station are each capable of delivering submicroliter volumes within a volume  
3 range of less than about 15 nL.

1 69. The apparatus according to claim 38 wherein the mother liquor drop station and the  
2 molecule drop station are each capable of delivering submicroliter volumes within a volume  
3 range of less than about 10 nL.

### CONCLUSION

Applicants submit this Preliminary Amendment prior to the examination of this application on the merits. Since the present amendment does not introduce new matter, Applicants respectfully request its entry prior to examination of the present application.

Respectfully submitted,

Date: Dec. 21, 2001

By: David J. Weitz  
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**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**In the Specification:**

The paragraph at page 1, line 11, has been amended as follows:

This application is a continuation of U.S. Application No. 09/851,397, filed May 7, 2001,  
which is a c[C]ontinuation-in-[P]art of U.S. Application No. 09/336,134, filed June 18, 1999, all  
of which [is] are incorporated herein by reference in their entirety.

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